View™

The Record & Field-level Security Component of iSecurity

User Guide Version 3

RAZ-LEE™
The iSeries Security Experts

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Visit our web site at www.razlee.com.

Record your product authorization code here.

Computer Model	
Serial Number	
Authorization Code	

About This Manual

Who Should Read This Book

This user guide is intended for system administrators and security administrators responsible for the implementation and management of security on iSeries systems.

Terminology

This manual attempts to adhere to standard IBM iSeries (AS/400) terminology and conventions whenever possible. However, deviations from IBM standards are employed in certain circumstances in order to enhance clarity or when standard IBM terminology conflicts with generally accepted industry conventions.

Documentation Overview

Raz-Lee takes customer satisfaction seriously. Therefore, our products are designed for ease of use. The documentation package includes a variety of materials to get you up to speed with this software quickly and effectively.

Printed Materials

This user guide is the only printed documentation necessary for understanding this product. It is available in user-friendly PDF format and may be displayed or printed using Adobe Acrobat Reader version 4.0 or higher. Acrobat Reader is included on the product CD-ROM.

This manual contains concise explanations of the various product features as well as step-by-step instructions for using and configuring the product.

On-Line Help

PC based on-line help is also available in JavaHelp format. Click the **Help** button from your **View** menubar.

Typography Conventions

This document is intended to be printed by the end user and viewed on-line using a variety of different PC platforms. Accordingly, it was written using standard Windows TrueType fonts that are installed on virtually all systems. You do not need to install any special fonts in order to view or print this document.

- Body text appears in **10-point Times New Roman**.
- Menu options, field names, and function key names appear in **Arial Bold**.
- OS/400 commands, system values, data strings, etc. appear in ***Bold Italic.***
- Key combinations are separated by a dash, for example: **Shift-Tab**.
- Referrals to chapters or procedures appear in *Times New Roman Italic*.

1 Introducing View

Chapter 1: Introducing View

What is View?

View is a state-of-the-art, record and field-level security solution that restricts access to specific records and fields in iSeries databases without any modification to other applications. **View** works with all types of file access. This patent-pending solution is especially relevant to the banking, health-care, e-commerce, and defense environments where you work with large databases.

Why You Need View

O/S 400 Security and other third-party solutions provide protection at the object level only. But **View** is unique. It lets system administrators create rules that define which users are authorized to view or modify the contents of individual records and fields in a database. If a user does not possess the proper credentials, he cannot view or modify data in a protected field. However, he can continue to work with data in unprotected fields. **View** security definitions do not modify your data files in any way. **View** features a stunning GUI interface, and is especially designed for ease-of-use by non-technical personnel.

So why worry about prying eyes? Unauthorized access to sensitive data has serious ramifications, such as identity theft, stolen credit records, or E-mail address harvesting. But not with **View**! With **View**, you control **WHO** sees **WHAT** and **WHEN**.

View....

- is the only third-party solution that controls file access at the field and record level
- does not require any programming or modifications to existing applications
- allows you to control access to multiple fields and records

Technical Overview

Disk Space

Minimal overhead. One additional logical file is defined for each physical file handled by View.

I/O

Minimum to no overhead. When the user asks to hide fields (rather than records), an additional “logical view” of the file is built. When the user asks to hide records, an additional index is built.

CPU

Minimal overhead. I/O activities resulting from View do not require additional CPU resources

The View Solution

iSecurity **View** is comprised of two applications:

- GUI Java-based application that is connected to the iSeries
- iSeries native application

Hiding data in files is accomplished by rerouting I/O activity to files which actually implement the rules which defined the conditions for hiding records/fields.

In order to actually hide data in records/fields, certain monitoring capabilities are added to various commands (ADDLIBLE, CHGLIBL, RMVLIBLE, OVRDBF) using a standard OS/400 feature called Command Extension Exit Program. This feature is extremely efficient and uses an extremely small footprint.

In addition, there is a small change implemented when an interactive or batch job begins execution. There is some overhead caused by this change, however it is important to note that this is a one-time occurrence per job.

On the other hand, users may decide to manage activity themselves and thereby possibly reduce overhead.

View reroutes I/O to the proper file and uses the authority of the system to prevent non authorized access by potential hackers.

Many sites have far too many personnel with a powerful security level such as *ALLOBJ. In such a case, **View** provides the ability to check the user definition each time a user file is accessed. This check is very efficient but obviously the overhead is proportional to the number of files being opened.

View Mechanism

iSecurity **View** is comprised of two applications:

•GUI Java-based application that is connected to the iSeries

•iSeries native application which is divided into 3 libraries, SMZ5, SMZ5CMD and SMZ5DTA

View creates a user profile called SECURITY3P which is the owner of the **View** commands.

View provides a set-up option called “Add on the Fly Detection” which inserts the following 4 exit programs into the exit point named QIBM_QCA_CHG_COMMAND

1. Exit program for the ***ADDLIBLE*** command
2. Exit program for the ***CHGLIBL*** command
3. Exit program for the ***OVRDBF*** command
4. Exit program for the ***RMVLIBLE*** command

View also provides a "Remove on the Fly Detection" option that allows the site to remove all the exit programs from the exit point.

View has additional options required for successful operation:

- Program RL#QCMD is added to the subsystem routing entry
- A Remove option to safely uninstall **View** is also available and can be used any time

During the installation of **View**, the command: CHGUSRPRF is used as follows:

CHGUSRPRF USRPRF(SECURITY3P) USRCLS(*SECOFR)

SPCAUT(*JOBCTL *ALLOBJ *SECADM)

This command activates the site's existing exit program; as such, View does not intervene or otherwise enter any of the site libraries!

During the installation process **View** changes the **Audit** value of the user profile SECURITY3P. Therefore, for the installation process, QSECOFR with *AUDIT authorization is required, as follows:

"CHGUSRAUD USRPRF (SECURITY3P) OBJAUD(*NONE)

AUDIT special authority is required to change the AUDLVL(*NONE)"

The GUI application creates a group of users (4 characters) that will represent the group using the encrypted files.

This group will create a new library called SMZ5XXXX where XXXX = group that is the library

containing the product's encrypted logical files based on the site's physical or logical files.

View can encrypt either specific fields or records.

In order to encrypt decimal fields, **View** adds 2 new fields to the physical file. It is therefore suggested initially to test **View** with small test files in order to understand exactly how the product works.

If a character field in selected records is to be encrypted, there are no additional changes required, besides creating new logical files.

View can be used by users that in the initial program specify CHGLIBL or ADDLIBLE and applications that use OVRDBF.

View also provides the possibility to change, for the group of users, the authority for the files so that if the to-be-encrypted files are addressed directly with the library, an error will result saying that the user is not authorized to this file.

Restrictions

View requires no changes to application code in order to support the product. Yet there are some restrictions:

1. If the hidden field is Numeric or a DBCS (double byte character set) field, when creating the screen view, the PF will be modified to contain a dummy field. The file will than be changed to LVLCHK(*NO) so that the existing software continues running without any interference. This process is automatic.
2. If the program uses an SQL statement which specifically names the hidden field for update (instead of just issuing “update last fetched row”), a change is required in the application to monitor for such an error and reattempt the SQL.
3. If the program uses a LIBRARY/FILE reference to the file in any CL command except OVRDBF, or if the program uses a LIBRARY/FILE reference to the file in any SQL command except XXXXXXXXXXX, a change is required to the application to work with OVRDBF or use the *LIBL instead.
4. If the system is operating with a maximum of 25 files as in old releases (instead of the 250 that are now enabled), and you are approaching 25 files, you must upgrade to the new capability of 250 libraries or reduce the number of libraries in the library list.

It is highly recommended to have access to either the application developers or to the application source itself.

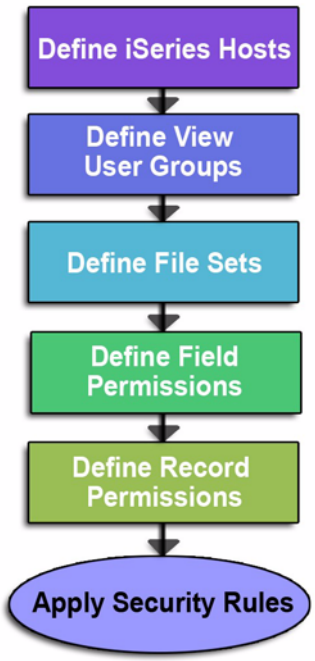
On the other hand, our experience has shown that all standard applications with traditional IO require no change, or merely some changes in a minimum number of CLPs.

All standard applications using SQL require a minimal number of changes if any, or merely some changes in a minimum number of CLPs.

How View Works

Top-Down Security Design

View security works according to a logical, hierachical design. This means that designing and applying record and field-level security rules follow an intuitive, logical process. The following diagram illustrates the rule-definition process.



View Top-Down Security Design

The following explains each level.

Hosts

A host is an iseries system that hosts the database files that you wish to protect. The host is identified in View by its IP address.

User/User Groups

View works exclusively with pre-defined groups of users called User Groups. User Groups contain one or more individual profiles or OS/400 group profiles. You cannot use individual user profiles to define record and field-level security rules.

Sets

A set consists of one physical file and, optionally, any logical files associated with that physical file. A set is always associated with one or more user groups.

Files

Record and field-level security rules are defined individually for each file. There are two types of native OS/400 files:

- **Physical files** contain the actual physical data organized into several data fields.
- **Logical files** do not actually contain any data, but present logical formatted "views" from one or more physical files. This is roughly analogous to SQL views. Since you can use logical files to view, modify, and update data residing in physical files, **View** provides record and field-level security for logical files in the same manner as physical files.

Permissions

View features two types of security permission rules.

- **Record Permissions** are rules that restrict access to specific database records according to Boolean selection comparison operators (i.e. a record permission rule that restricts access to payroll records where the base salary **>** 12,000 $).
- **Field Permissions** are rules that restrict access to specific fields in a database record. These rules are based on three types.
  - **Full** Access - Users can view and modify fields
  - **Read-Only** Access - Users can view but not modify field contents
  - **None** (Access Denied) - Users cannot view or modify field contents

Performance impact of View

View is implemented by use of a Logical File (LF) per each file that has hidden fields/ records

The performance impact is virtually near zero.

Disk space consideration

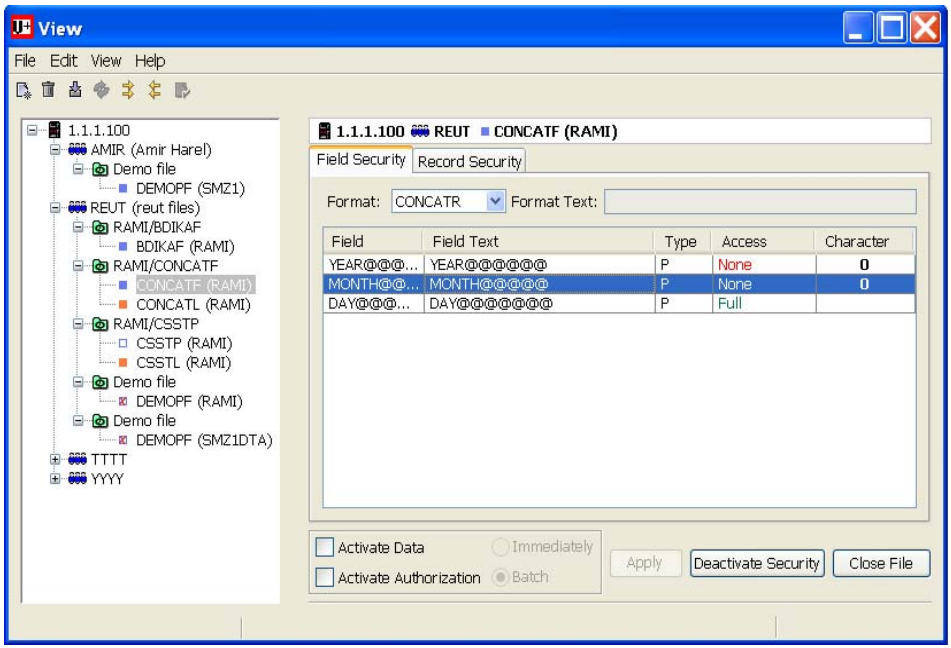
As long as only fields are hidden, the disk space consumed is minimal. It is normally the size of an empty LF (0.1MB). This is because the access path of the existing file will be used by the View.

If records should be hidden, the disk space is the size of a LF which includes Select/Omit rules.

The User Interface

The Main Screen

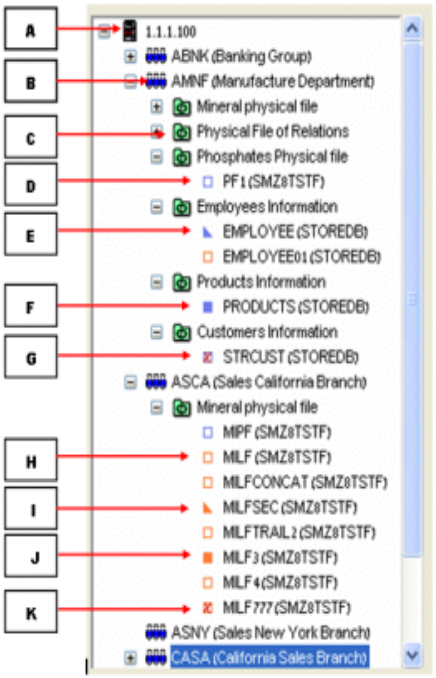
View has one screen, which is divided into two work areas, the **Navigator** pane and the **Data** pane. The following is the main interface of **View** and its main components.



View Main Screen

Navigator Pane

The **Navigator** pane enables you to find, select, open, delete, and rename your groups, sets and files, in addition to displaying their hierarchy. The **Navigator** pane also displays whether or not a file (logical or physical) has Activated Security (see Chapter 6, *Working with Permissions*).



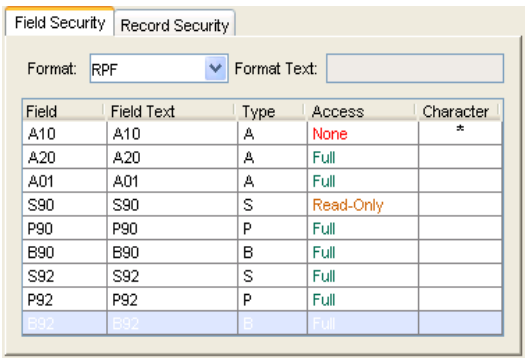
Navigator Pane

Item	Icon	Description
A		iSeries host
B		View User Group
C		File set (a physical file and its logical file/s)
D		Physical file without activated security
E		Physical file with activated security in progress
F		Physical file with activated security
G		Physical file that failed to activate security
H		Logical file without activated security
I		Logical file with activated security in progress
J		Logical file with activated security
K		Logical file that failed to activate security

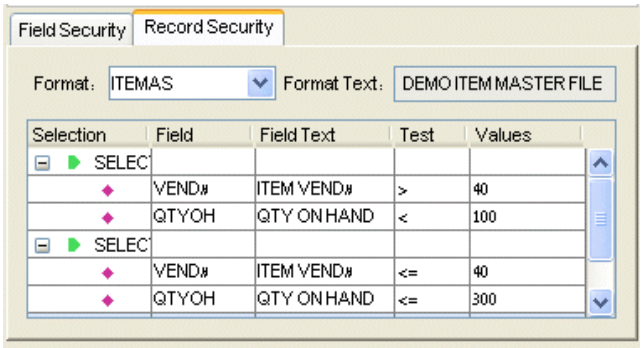
Data Pane

This pane displays the security definitions for fields and records in the current file. Use this screen to define rules that govern access definitions.

The **Data** pane contains the **Field Security** tab and the **Record Security** tab.



Data Pane (shown open to Field Security)



Record Security

Status Bar

The Status Bar, found at the top of the **Data** pane, displays the current host, user group, and file.

Status Bar

Icon	Description
1.1.1.100	IP address of the iSeries host
AMNF	Name of the User Group
EMPLOYEE (STOREDB)	File name and library

Shortcut Menus

Shortcut menus appear whenever you press the right mouse button. The contents of the shortcut menus vary according to the specific operation being performed and/or the location of the cursor.

Menu Bar

Many **View** features are available from the menu bar, located at the upper left side of the screen.

Menu Bar

Item	Icon	Command/Submenu
File		**New > Group** = Defines a new User Group
		New > Set = Defines a new file set
		New > Logical File/s = Displays a list of all logical files relevant to a particular physical file
		System > New = Defines a new iSeries host
		System > Disconnect = Disconnects the iSeries host from View
		System > Remove = Removes the iSeries host from **View**
		Properties = Displays group properties, enabling you to edit group
		Exit View = Close application
Edit		**Delete** = Deletes groups files, and sets from **View**
		Rename = Renames sets
		Deactivate Security = Disenables security rules and permissions
		Configuration =
View		**Refresh** = Updates the Rules Database in **View**
		Link with Editor = Highlights (in blue) the file in the navigator pane that is being displayed in the **Data** pane

Toolbar Icons

The **View** toolbar provides a fast, easy way to access many of the features. The following is a list of all toolbar buttons.

Icon	Name	Description
	New	Define a new iSeries host, group, file, or set
	Delete	Deletes groups, files, and sets from **View**
	Deactivate Security	Disenables security rules and permissions
	Refresh	Updates the Rules Database in **View**
	Link with Editor	Highlights (in blue) the file in the **Navigator** pane that is being displayed in the **Data** pane
	Properties	Displays Group properties, enabling you to edit group

iSecurity

Raz-Lee's **iSecurity** is an integrated, state-of-the-art, security solution for all iSeries systems, providing cutting-edge tools for managing all aspects of network access, data, and audit security. Its individual components work together transparently, providing comprehensive "out-of-the-box" security. Other **iSecurity** products include:

Assessment

Assessment checks your ports, sign-on attributes, user privileges, passwords, terminals, and more. Results are instantly provided, with a score of your current network security status with its present policy compared to the network if iSecurity were in place.

Firewall

Firewall protects and secures all types of access, to and from the iSeries, within or outside the organization, under all types of communication protocols. **Firewall** manages user profile status, secures entry via pre-defined entry points, and profiles activity by time. Its Best Fit algorithm determines the validity of any security-related action, hence significantly decreasing system burden while not compromising security.

Audit

Audit is a security auditing solution that monitors iSeries events in real-time. It includes a powerful query generator plus a large number of predefined reports. Audit can also trigger customized responses to security threats by means of the integrated script processor contained in **Action**.

Action

Action automatically intercepts and responds to security breaches, system activity events, QHST contents, and other message queues. Inquiring messages can be automatically answered. Alerts are sent by e-mail, SMS, pagers, or the message queues. Command scripts with replacement variables perform customized corrective actions, such as terminating a user session or disabling a user profile.

Anti-Virus

Anti-Virus provides solid virus protection that prevents your iSeries from becoming an infection source. **Anti-Virus** automatically scans and examines all incoming IFS files, validating and checking them as they are enrolled or modified. Anti-Virus authenticates them, and finally quarantines or erases infected files.

Capture

Capture silently captures and documents user screens for tracking and monitoring, without any effects on system performance. It also preserves job logs for subsequent review. capture can run in playback mode and can be used to search within texts.

Screen

Screen protects unattended terminals and PC workstations from unauthorized use. It provides adjustable, terminal- and user-specific time-out capabilities.

Password

Password provides a first-tier wall of defense for users by ensuring that user passwords cannot be easily cracked and guessed.

AP-Journal

AP-Journal automatically manages database changes by documenting and reporting exceptions made to the database journal.

2 Getting Started with View

Chapter 2: Getting Started with View

Obtaining Your Authorization Code

A valid product authorization code is required in order to run this product. Contact your authorized Raz-Lee distributor or reseller to receive the proper code.

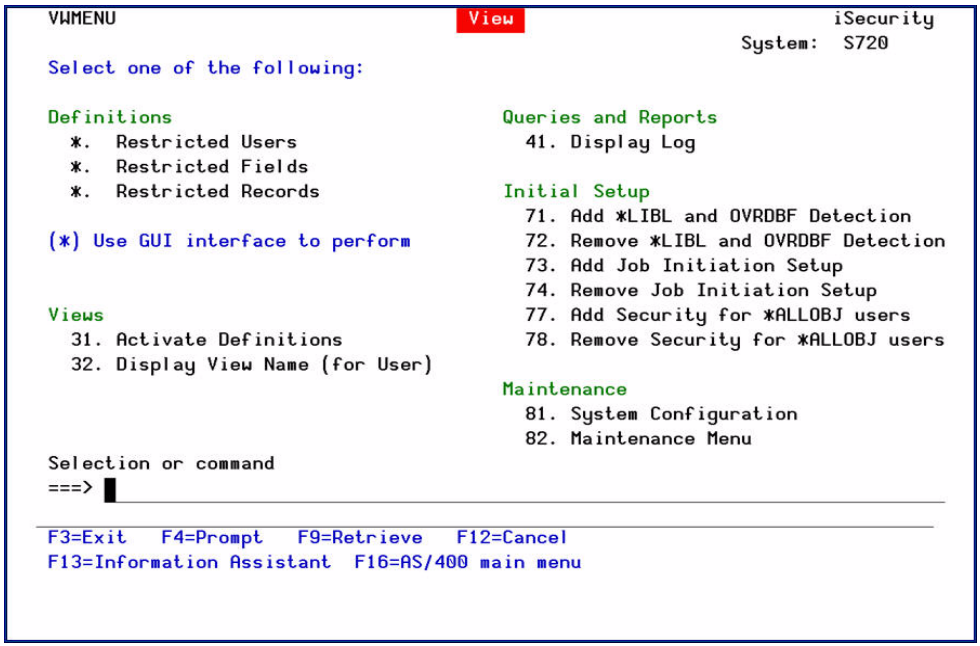
If you are evaluating this product, you will receive a temporary authorization code valid for 30 days. If you have purchased a license, you will receive a permanent authorization code that is specific to the serial number and model of the computer on which it is installed.

If you upgrade your iSeries hardware, or purchase a more recent version of the product, you must request a new authorization code.

Entering Your Authorization Code

If you did not enter your authorization code at this time, you must do so now at this time. This proceduremay only be performed using the native iSeries interface. Perform allsteps in order.

1. Signon to the iSeries host.
2. Type ***STRVIEW*** from any command line. The **View** main menu appears.



View Main Menu

3. Select **81 > F22** from the main menu.
4. Enter the authorization code in the appropriate field.

NOTE: *If you enter an incorrect code, you will receive an error message when you attempt to access product features. If this occurs, simply repeat the above procedure to enter the correct code.*

Changing the View Password

An additional product-specific password is required to access certain features. The default password is ***QSECOFR***. It is highly recommended to change this password immediately after using the product for the first time. This operation may only be performed using the native iSeries interface.

To change the product-specific password:

1. From the **View** main menu, select **81 > 92**. The **Modify Password** screen appears.
2. Enter the new password in the **New Password** field.
3. Enter again in the **New Password (to verify)** field.
4. Press **Enter** to continue. If the two paswords you entered fail to agree, an error message will appear. Repeat steps 2 and 3 to correct.

Connecting to the iSeries Host

You must connect to the iseries host in order to work with your files.

NOTE: *If this is the first time the* **View** *is activate, select* **System>New** *from the* **File** *menu to define the system connection.*

1. Double click the iSeries host icon . The **Connect to Server** dialog box appears.

Connect to Server

2. Enter user name, password, and **View** password (the default is ***QSECOFR***). Note that the system address already appears.
3. Click **OK** to connect.

Disconnecting from the iSeries Host

1. Select **System > Remove** from the **File** menu.
2. Click **Yes** to confirm.

Working with iSeries Hosts

Adding a New iSeries Host

This procedure describes how to create and modify iSeries systems in **View**.

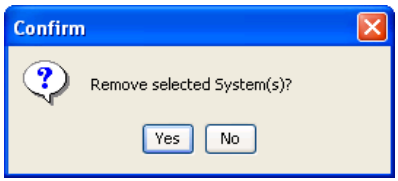
To add a new iSeries host system, perform the following steps:

1. Select **System > New** from the **File** menu. The **New System** dialog box appears.
2. Enter the IP number for the new system and click **OK**. The system icon appears in the **Navigator** pane.

Removing an iSeries Host

To remove an iSeries host from **View**, perform the following steps.

1. Select **System > Remove** from the **File** menu. The **Confirm** dialog box appears.



Confirm

2. Click **Yes**.

NOTE: *Removing a host from View does not delete the product data from the system.*

3 Working With User Groups

Chapter 3: Working With User Groups

Overview

View user groups enable you to apply field-level security rules to pre-defined groups of users. **User groups** contain one or more individual user profiles, thereby greatly reducing the number of rules required to implement field-level security.

Note that field-level security rules require the use of group profiles. You cannot define rules for individual user profiles or OS/400 group profiles.

When creating user goups, **View** enables you to **restrict** and **except** users, thereby creating a group unique to **View**. The following provides an explanation.

Restrict	Basing your user group on any combination of individual users and OS/400 user profiles. For example, you can create a user group called “Finance” which restricts the Accounting Department, the Marketing Department, and the two out of the five company secretaries.
Except	When creating your user group based on a particular OS/400 user profile, leaving out certain member/s of that group. For example, in the above group called “Finance”, I want to except the Marketing department manager. he will not be in the new user group created for **View** and the permissions and/ or restrictions will not apply to him.

The following section describes the procedures for defining and modifying **View** user groups.

Defining and Modifying User Groups

To define a new **View** user group, perform the following nine steps.

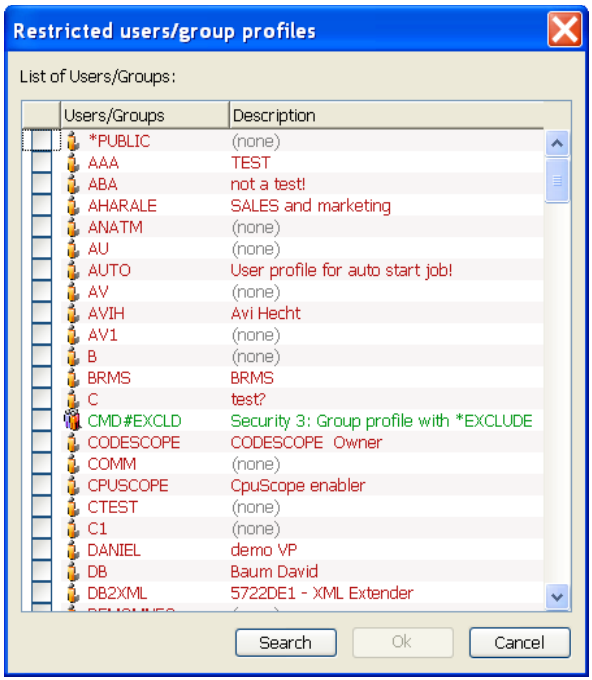
1. Select the desired host system icon in the **Navigator** pane.
2. Select **New > Group** from the **File** menu, or click the icon on the toolbar. The **New Group** dialog box appears.
3. Enter the group name in the **Group** field. Group names must be exactly four characters in length.
4. Enter a description of the group in the **Description** field. See the following example.

New Group

5. From the **Exceptions** and **Restricted** field, perform one or both of the following:

- Click **Restricted Users/Groups** to restrict individual users of the group
- Click **Exceptions to restricted users** to except individual users in the group

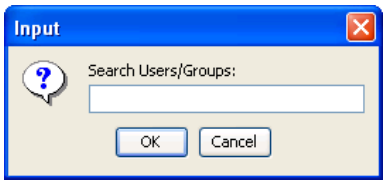
The **Users/Groups** dialog box appears. (The following shows **Restricted Users/Groups**.)



Restricted Users/Groups

NOTE: *Individual users are displayed in the color **red**, whereas iseries group profiles are displayed in the color **green**.*

6. Select the check-box to choose which individual user or group profiles to restrict and/or except. You may also click the **Search** button at the bottom of the dialog box to search for a specific profile.



Input

7. Click **OK** to confirm. The **New Group** dialog box returns.
8. Repeat steps five through seven in this procedure to add or exclude additional users and/or groups from the new group.
9. Click **OK** to complete the group definition.

Deleting User Groups

To delete a user group, perform the following steps.

1. Select the desired user group in the **Navigator** pane.
2. Click the icon, and then **Yes** in the **Confirmation** box. The group is now deleted.

4 Working With Sets and Files

Chapter 4: Working With Sets and Files

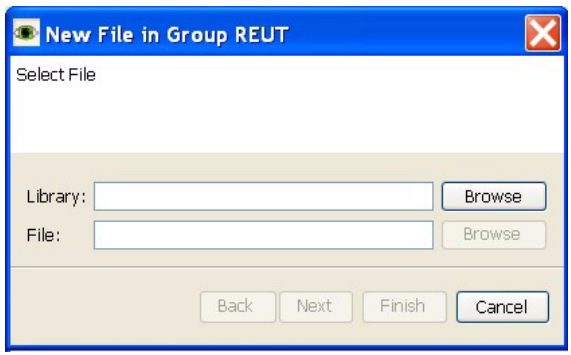
Overview

A set consists of one physical file and, optionally, any logiacal files associated with that physical file. Logical files contained in a set may be located in different libraries from its physical file. A set is always associated with one or more user groups.

Creating a New Set

To create a new set, perform the following steps.

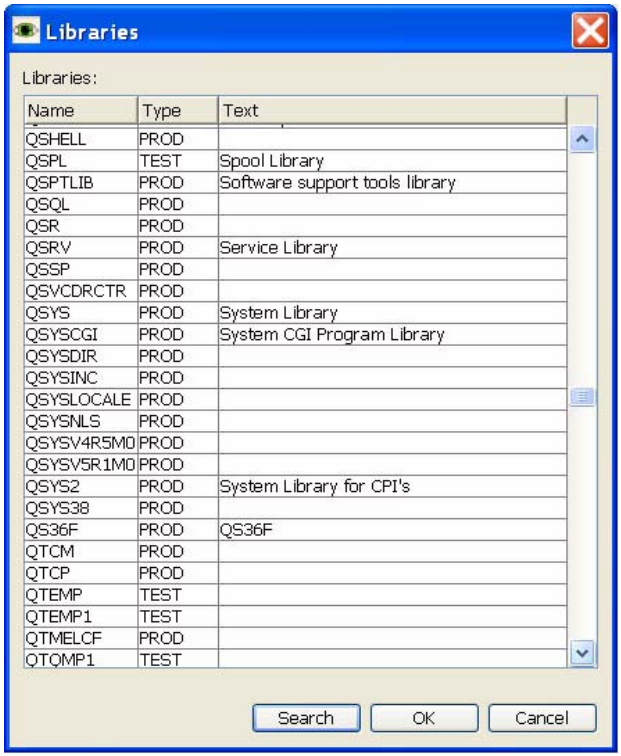
1. Select the group in the **Navigator** pane where you want the set to appear, right-click on the group's name and select **New>Set**. The **New File in Group** dialog box appears.



New File in Group

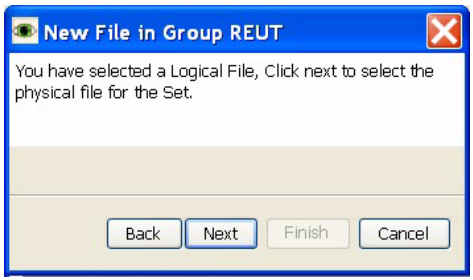
2. Type the library or file name in the appropriate fields, or click the **Browse** button to select the file and/or library from a dialog box.

NOTE: *You may also search for a specific library or file by clicking the Search button (see below) in the dialog box that appears whenever you click Browse. Click to select the correct row (if using the scroll option), and click OK.*



Libraries

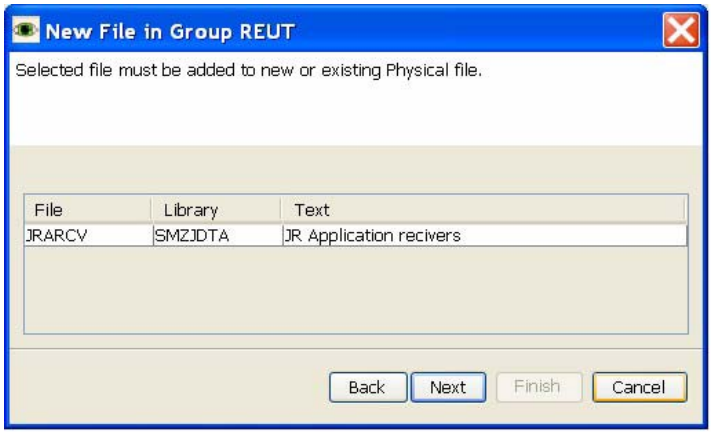
3. Verify your selection in the **New File** dialog box, and click **Next** to continue. If you have selected a logical file, a message appears indicating this fact.


New File in Group REUT
You have selected a Logical File, Click next to select the physical file for the Set.
Back
Next
Finish
Cancel

New File in Group (highlighting logical file message)

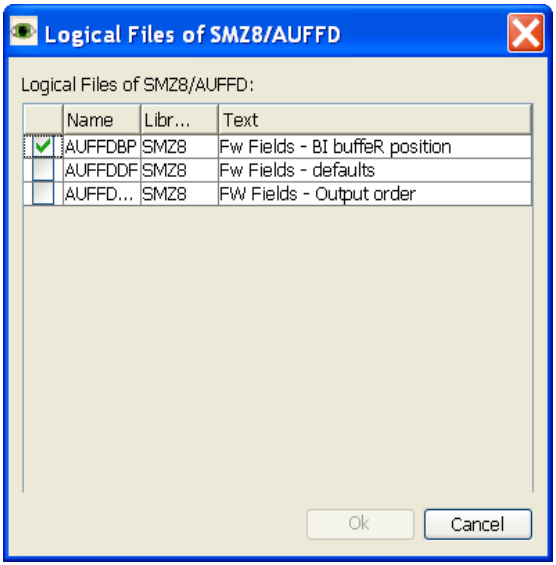
4. If you selected a logical file, the **New File** dialog box appears with a message requesting that you associate it with a physical file. Click to select a physical file

associated with the logical file, and then click **Next** to continue. This step is not applicable if a physical file is initially selected.



New File in Group (continued)

5. Enter a description of the file in the wizard and click **Next** to continue.
6. If you want to add additional logical files, select the **View Logicals** button. The **Logical Files** dialog box appears.



Logical Files

7. Select the relevant logical files for the set and click **OK**.
8. Click **Finish** from the **New File in Group** dialog box. The new set appears in the Navigator pane.

Adding or Removing Logical Files From a Set

1. Select the icon in the **Navigator** pane. Alternately, you can select the physical file in the set that is relevant to the logical file you want to remove.
2. Click the icon and select **Logical Files** from the pop-up menu.
3. Check or un-check logical files as appropriate from the **Logical Files** dialog box. Click **OK** to continue.
4. Right-Click the set and select “Apply rules to relevant LF”
5. Check “Activate Data” and “Activate Authorization”
6. Select to activate the ruls “Immediately” or in “Batch” and click “Apply”

Deleting Files From a Set

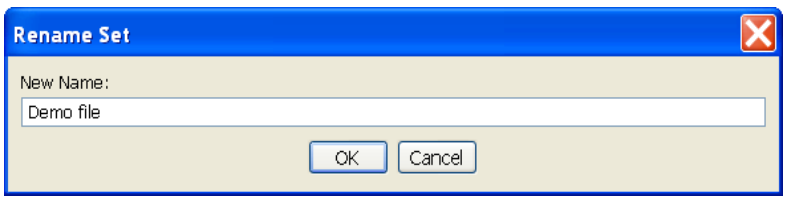
1. Highlight the file in the **Navigator** pane.
2. Click the icon and click **Yes** from the **Confirm** dialog box.

NOTE: *Deleting a physical file results in deleting that entire file set.*

Renaming Sets

To change the name of an existing set, perform the following steps.

1. Select **Edit > Rename**. The **Rename Set** dialog box appears.



Rename Set

2. Enter the desired name change and click **OK**.

Deleting Sets

To delete an existing set, perform the following steps.

1. Highlight the file in the **Navigator** pane.
2. Click the icon and click **Yes** from the **Confirm** dialog box.

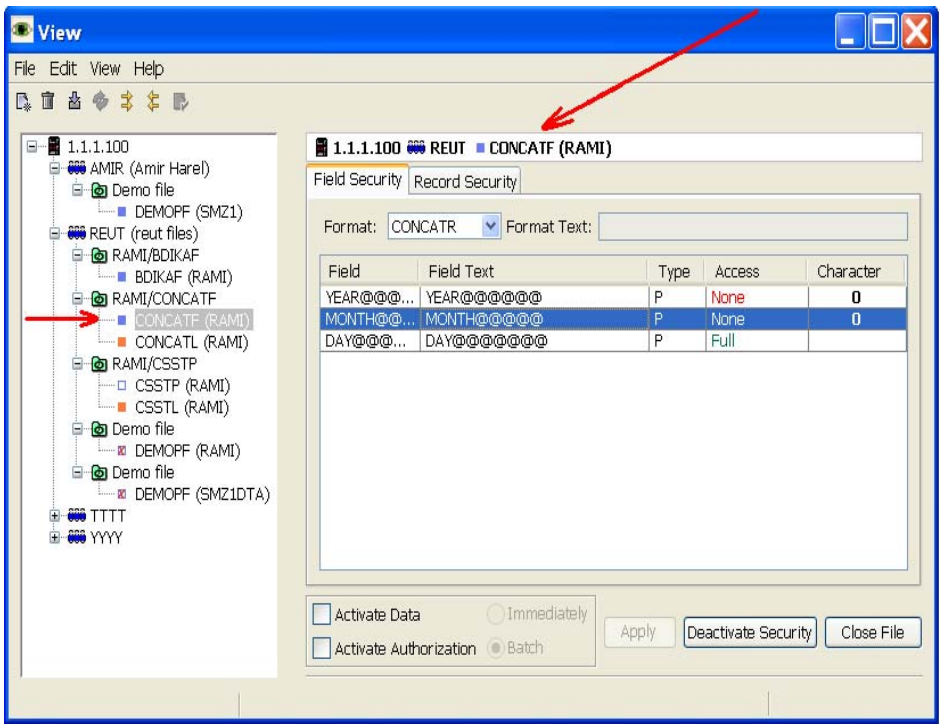
NOTE: *This procedure can also be used to delete individual files. However, deleting a physical file is the same as deleting its set because the set does not exist without its physical file. Logical files, on the other hand, can be deleted without any effect to the set.*

Using Link with Editor

This convenience option highlights the active (open) file in the **Navigator** pane.

To use **Link with Editor**, follow this simple procedure.

1. Click the icon in the toolbar. The file that is active in the **Data** pane is now highlighted in the **Navigator** pane.
2. Check by noting that the file name displayed on the status bar and the file highlighted in the **Navigator** pane are one and the same. The following screen capture shows the highlighted file in the **Navigator** pane, and the file name displayed on the status bar.



View Main Screen (highlighting Link with Editor option)

5 Working With Permissions

Chapter 5: Working With Permissions

Overview

View offers two types of permissions, **Field Permission**s and **Record Permissions**.

- **Field Permissions** are rules that restrict acces to specific fields in a database record. There are three kinds of Field Permissions:
  - **Full** Access - Users can view and modify field contents
  - **Read-Only** Access - Users can view but not modify field contents
  - **None** (Access Denied) - Users cannot view field contents
- **Record Permissions** are rules that restrict access to specific database records according to Boolean selction comparison operators. For example, you may define a record permission rule that restricts access to payroll records where the base salary is greater than (**>**) $ 12,000.

These permissions are accessible only through the **Data** pane. The **Data** pane is composed of two parts.

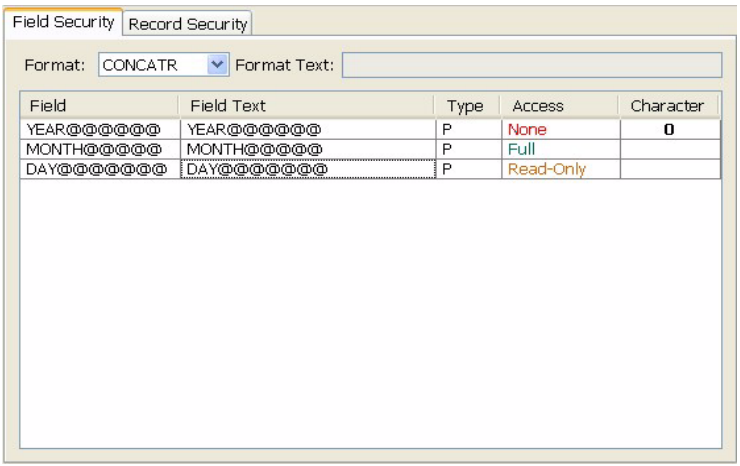
- The **Field Security** tab enables you to define field permissions
- The **Record Security** tab enables you to define record permissions

These tabs can only be opened one at a time. When opening the **Data** pane, **Field Security** opens first by default.

Working with Field Permissions

Understanding Field Permissions

The **Field Security** tab displays every field in the active (open) file, in list form. Additional parameters are also shown.



Field Security tab

The table on the following page provides an explanation.

Parameter	Definition
Field	Field name
Field Text	Description of the field, i.e. Country of Citizenship or Company Payroll
Type	Type of data contained in field: **A** = Alphabetical **B** = Binary **P** = Packed decimal (numeric) **S** = Decimal
Access	The types of permission you wish to grant: **Full** Access - Users can view and modify field contents **Read-Only** Access - Users can view but not modify field contents **None** (Access Denied) - Users cannot view field contents **Org.** = Indicates that according to original file, the field is already protected from modication. This access appears only in the **Read-Only** and **None** permissions.
Character	The character that appears in the data field in place of the restricted data. The character appears only where access is **None**. The default is an asterisk (*****) for alphabetical fields and zero (**0**) for numerical fields.
Based on PF Fields	This column appears only on logical files and shows the physical file origin of each field.

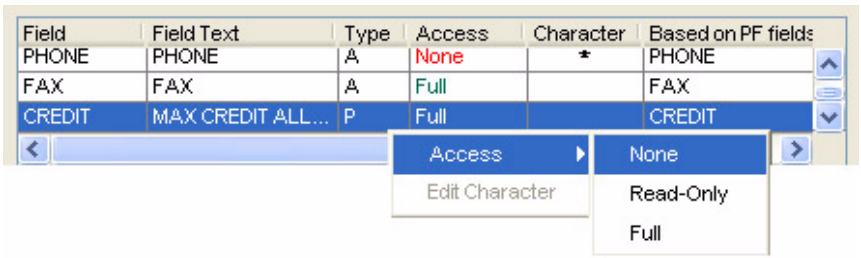
The process of defining field permissions is simple. Decide:

- Which user group do you want to grant access to?
- Which specific fields do you ant to allow and/or restrict to that group?
- Which level of access do you want that group to have? Do you want them to be able to:
  - both read and modify the specific fields?
  - only read the fields with no permission to modify?
  - be restricted from viewing completely?

Defining Field Permissions

To grant field permissions in file access, perform these steps.

1. Double click the desired file in the **Navigator** pane. The **Field Security** tab appears in the **Data** pane. You may also “drag and drop” the file from the **Navigator** pane to the **Data** pane.
2. If working in **Multiple Record Format**, you may need to change the record format from the **Format** drop-down option (located at the top left of the **Data** pane).
3. Find the desired field in **Field Security** and right click that line.
4. Select **Access** from the shortcut menu, and then select your desired permission. When choosing **Access > None**, you may edit the character.



Field Security (partial view)

Activating Security

See **Activation Settings** in this chapter.

Deactivating Security

1. Select the desired file in the **Navigator** pane.
2. Click the icon or the

field, and then click **OK** in the **Deactivate Security** dialog box.

Deactivate Security

Editing Field Permissions

1. Double click the file in the **Navigator** pane that contains the field(s) you want to edit. The file opens in the **Data** pane.
2. Find the correct field and right click that line. The **Access** shortcut menu appears.
3. Select the desired permission.
4. Click **Apply** and then **Close**.

Updating the Rules Database

Any changes/additions to **View** must be updated in the Rules Database. Therefore, perform this procedure immediately after you define or edit permissions.

1. Right click the host you want to update.
2. Click the icon.

Working with Record Permissions

Understanding Record Permissions

View enables you to define record-level security rules that control whether or not specific users can view or modify specific records in a database. Record-level security rules are based on conditional values of one or more fields using Boolean (comparison) operators.

Examples are:

- All salaries less than $40,000
- All employees working in the company for more than five years.
- All customers from a particular list

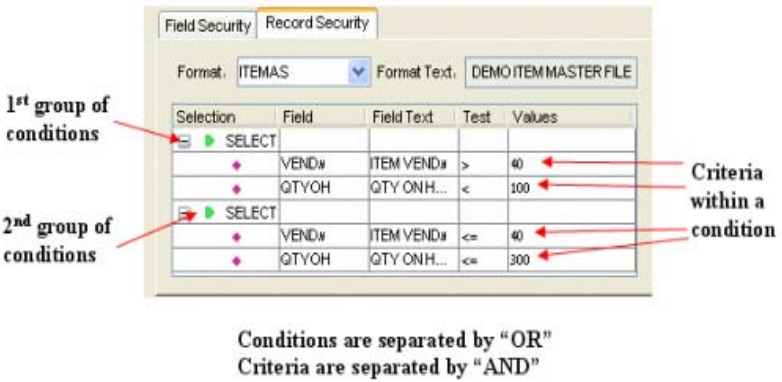
View supports multiple conditions in record-level security rules. You can create complex conditions by using logical **AND** and **OR** statements. For example, you can create a rule restricting access to inventory records where:

- Vendor number greater than 40 **AND** quantity on hand is less than 100 units

OR...

- Vendor number less than or equal to 40 **AND** quantity on hand is less than 300 units

The above example is shown in the following **Record Security** screen capture.



In order to define record permissions, you must use the shortcut menu that is optioned through the **Record Security** tab. The following explains the shortcut menu commands.

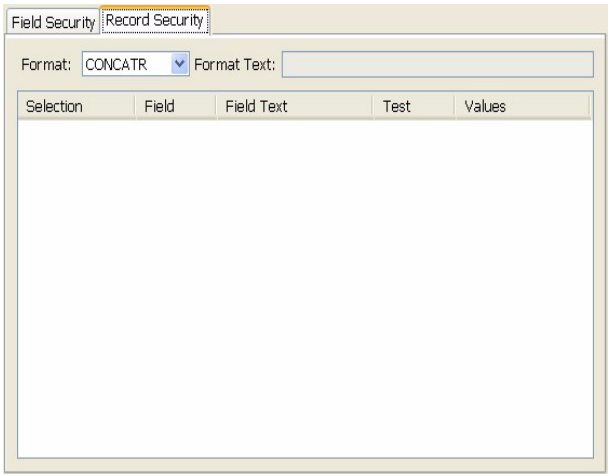
Command	Definition
New	**Select** = Add a new group of conditions. Users are permitted to see records that apply to those conditions. **Omit** = Add a new group of conditions. Records that apply to those conditions are prohibited to be seen by the user. **Condition** = Appends a logical **AND** criteria to an existing condition
Delete	Delete a condition or group of conditions
Edit	Edit a condition

Defining Record Permissions

To define record-level security rules, perform the following steps. The rules and examples refer to the example given in *Understanding Record Permissions*.

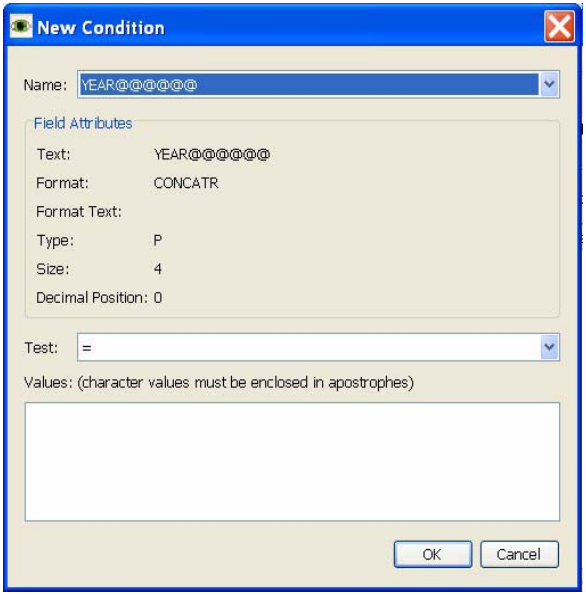
> **NOTE:** *To apply rules from a physical file to its logical file(s),right-click that physical filein the Navigator pane and select Apply Rules to Relevant LF.*

1. Double click the desired file from the **Navigator** pane.
2. Click the **Record Security** tab. If no rules have yet been defined, **Record Security** is blank.



Record Security (blank)

3. Right click anywhere in the **Data** pane and select **New > Select** from the shortcut menu. The **New Condition** dialog box appears.

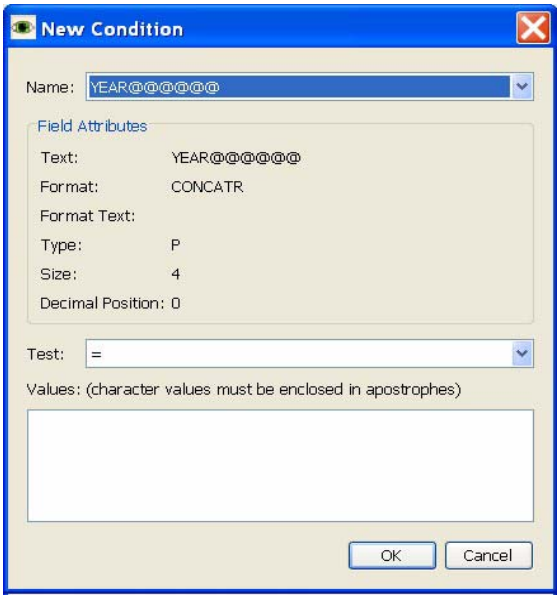


New Condition

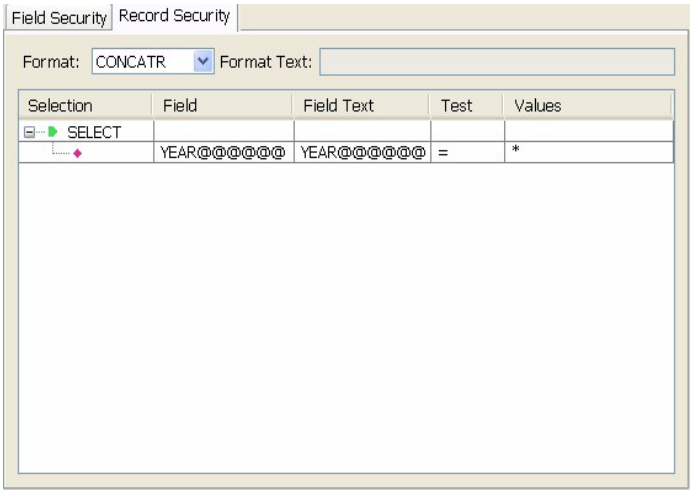
Parameter	Definition
Name	Select field name from drop-down list
Text	Field description
Format	The format of the field (display only)
Format Text	Format description (display only)
Type	Type of data contained in field (display only): **A** = Alphabetical **B** = Binary **P** = Packed decimal (numeric) **S** = Decimal
Size	Number of characters in field (display only)
Decimal Position	Number of decimal places in numeric field.
Test	**RANGE** = Between two values **LIST** = A list of values
Values	The value that the test is being compared to (alphabetic fields are entered in quotations).

4. Use the pull-down menu in **Name** (at the top) to find the field you want to define record conditions. Note that **Field Attributes** appear automatically; these are for display and information purposes only. The only parameters beside name that must be entered manually are **Test** and **Values**.
5. Enter the correct information in **Test** and **Values** and click **OK**. The following screen capture shows “Vendor number greater than 40”, and the condition appears in the Record Security.

NOTE: *When handling alphabetic fields, the value of the rule must be placed between quotes, unless the value is a field.*

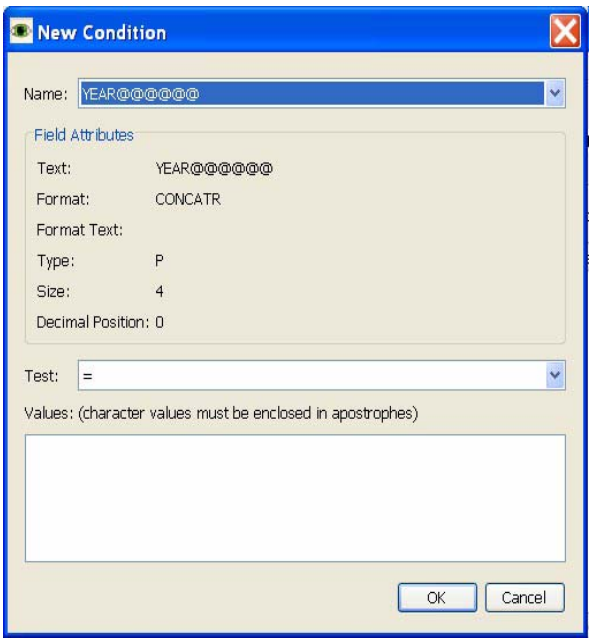


New Condition

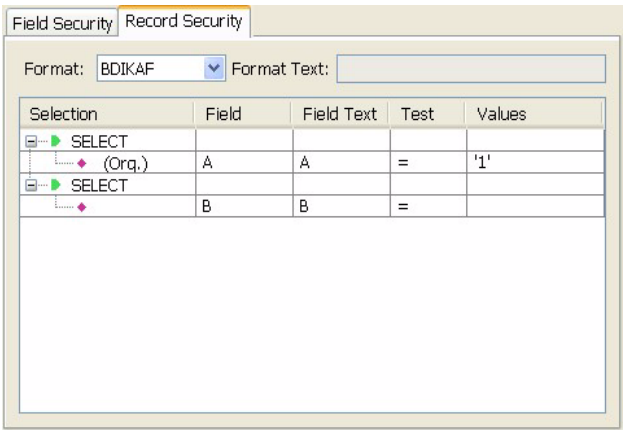


Record Security

6. To add another condition within **Select**, right click the word **Select** in **Record Security** (see the following screen capture). The conditions appear together in **Record Security** next to “bulleted” purple diamonds.



New Condition



Record Security

7. To create an **OR** condition, right click in **Record Security**, and select **New > Select** from the shortcut menu.
8. Continue to use the **New Condition** dialog box to define all your conditions.

Omitting Conditions

OMIT is the opposite of **Select**. **OMIT** instructs you not to apply the rules if certain conditions appear.

If we add an **OMIT** condition to our previous example, we note that permission is granted if:

- Vendor number greater than 40 **AND** quantity on hand is less than 100 units

OR...

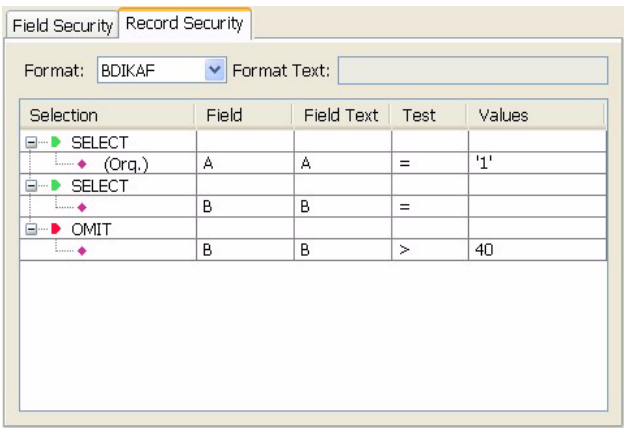
- Vendor number less than or equal to 40 **AND** quantity on hand is less than 300 units

BUT...

- Not if the quantity on order is greater than 200

By adding an **OMIT** condition, we state that the rules concerning the vendor number, etc., don't apply if the quantity on order is greater than 200.

The following screen capture displays this **OMIT** condition in **Record Security**.



Record Security

To omit conditions, follow this procedure:

1. Right click in **Record Security** and select **New > Omit** from the shortcut menu.. The **New Condition** dialog box appears.
2. Define your desired omission and click **OK**.

Activation Settings

After defining field and/or record permissions, you have four options.

- Save the settings in the database without activating or implementing security by simply pressing **Apply**.
- Implement standard protection by selecting **Activate Data**. This will create the logical file in the group library and is acceptable for most users.
- To protect from access to file from its full-qualified name (library/file), select **Activate Authorization**.This will revoke authorization from the user to the original file.
- Select **Activate Data** and **Activate Authorization** to provide maximum protection.

These options are achieved via the following procedures.

Saving Settings Without Activation

Keep the **Activate Data** and **Activate Authorization** check-boxes unselected and click **Apply**. As a result, all the seettings are saved in the **View** database and the file will maintain its former security.

- If the file wasn't secured before (or), it will remain that way
- If the file was secured before (or), it will remain secured, but accoording to its former settings

Saving Settings and Activating as a Batch Job

1. Check the **Activate Data** and **Activate Authorization** check-boxes.
2. Make sure that the batch radio button is checked and click **Apply**.

As a result, all the settings are saved in the **View** database, and the command to activate the file security is submitted as a batch job. Upon completion, the file icon in the **Navigator** pane changes to or when the batch job finishes running. The icons will change (you may click to refresh the file set on the **Navigator** pane to check progress).

- If the batch job is successful, the file security is activated and the icons will change to or .
- If the batch job fails, the file isn't secured and the icons will change to or . Check the reason for failure by going to the job spool file (the job name is always the file name).

Saving Settings Without Activating Immediately

Check the **Activate Data** and **Activate Authorization** checkboxes and make sure that the **Immediately** radio button is checked and click **Apply**. As a result, all the settings are saved in the **View** database and the command to activate the file security is running. Upon completion, the file in the **Navigator** pane changes:

- If the batch job is successful, the file security is activated and the icons will change to or .
- If the job fails, the file isn't secured and the icons will change to or . Check the reason for failure by going to the job spool file.

NOTE: *When activating security the first time a None access is applied to a numeric field in the file set, changes to the original file structure will take place. This process can be extensive, depending on the file size and system performance.*

Deactivating Security

1. Select the desired file in the **Navigator** pane.
2. Click the icon on the toolbar, and then click **OK** in the **Deactivate Security** dialog box.
3. As a result, the file will not be secured. However, its security definitions will remain in the **View** database.

Editing Record Permissions

1. Right click on the desired condition in **Record Security**.
2. Select **Edit** from the shortcut menu.
3. Enter your desired changes and click **OK**.

Deleting Record Permissions

1. Right click on the desired condition in **Record Security**.
2. Select **Delete** from the shortcut menu and click **Yes** to confirm.

To delete an entire selection, right click the line of the word "**SELECT**" from that selection and continue with the same procedure.

Changing Restriction Characters

This procedure shows you how to change the default restriction character, an asterisk (*****), to the character of your choice.

1. Open **Field Security**.
2. Right click the **Character** column.
3. Select **Edit Character** from the shortcut menu. The **Edit Character** dialog box appears.
4. Enter your desired character and click **OK**. Use only a single character and no doubles characters. For example, "**$**" is correct whereby "**$$**" is incorrect. After editing characters, all previously displayed characters automatically convert to the new one.

Activate GUI Definitions from the Native

After defining the fields and records according to the users and groups, the application must be activated from the native green screen.

1. Type ***STRVIEW*** to start the **View**.
2. Select option **71. Add *LIBL and OVRDBF Detection**
3. Select option **73. Add Job Initiation Setup** to activate the GUI definitions for specific subsystems.
4. Select option **31. Activate Definitions** to activate the GUI definitions for specific groups.

Appendix A

Changing the original base file

The following is true for changes made manually or by use of the ***CHGPF*** (Change Physical File) command of **iSecurity FileScope** products line.

View modifies (in most cases) the PF (Physical File) by adding 2 (3 in DBCS environment) fields after the other fields.

Should there be a need to apply a change to the PF, use one of the following strategies:

Strategy 1

1. Use ***STRPDM*** and delete the file view which is located in SMZ5xxxx where xxxx represent the group.
2. Apply the changes using the ***CHGPF***
3. Use the **View** GUI and activate again the definitions

Strategy 2

Before applying any change to the PF, add to the DDS the special fields that **View** adds to the product. Then, apply your changes and use ***CHGPF***.

The special fields are:

```
A          QQQQ00       2B 0      DFT(0)
A                                  COLHDG('View' 'field')
A          QQQQA0       1A        DFT('-')
A                                  COLHDG('View' 'fieldA')
```

For DBCS countries add also the field:

```
A          QQQQG0       1G        DFT(G'SO*SI')
A                                  COLHDG('View' 'fieldA')
```

Appendix b

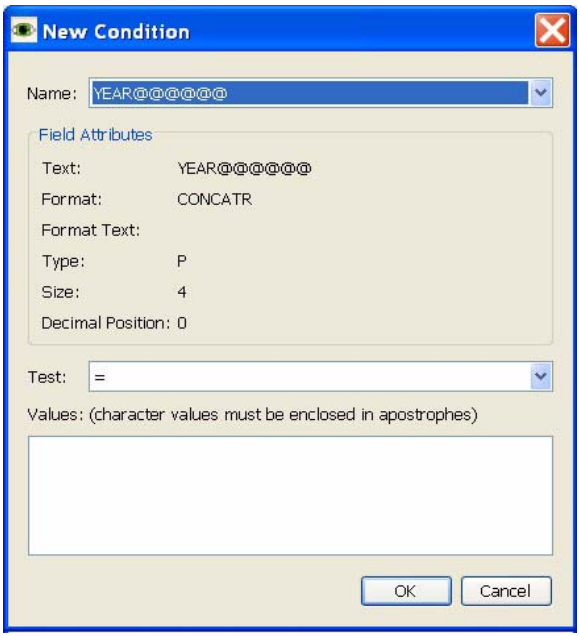
Appendix

The View User Guide Appendix is divided into two parts, **View Sample Tutorial** and **View Troubleshooting**.

View Sample Tutorial

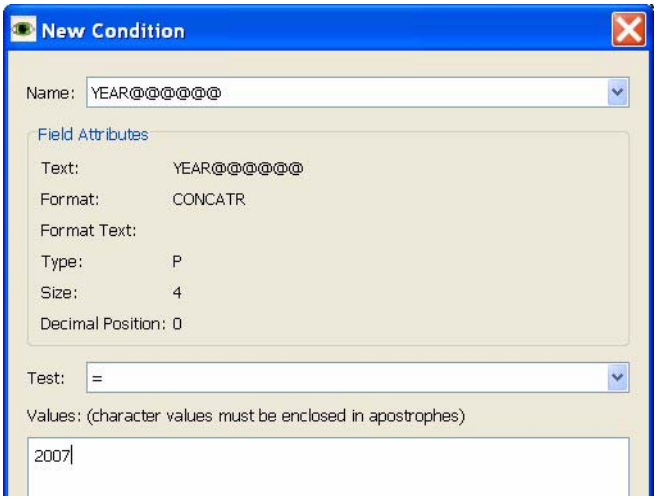
Suppose you want to grant the members of user group **MSY2** (Marketing Department) permission to read but not modify the field **Retail Customer Group** called "**Southside Merchants**" and "**Country of Location**" (only USA). After defining field permissions for Read-Only:

1. Click the **Record Security** tab (it appears empty).
2. Select **New > Select** from the shortcut menu. The **New Condition** dialog box appears.
3. In **Name**, scroll to find the correct field, (in this example, it's **YEAR@@@@@@**).



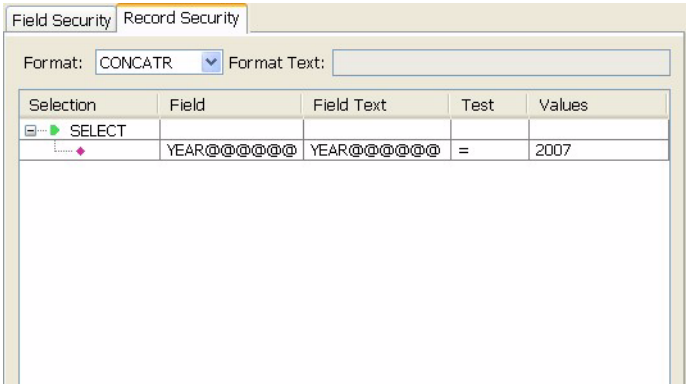
New Condition (displaying field YEAR@@@@@@)

4. Enter the correct data in **Test** and **Values** areas. In this example, because the desired year is 2007, enter an equal sign (**=**) in **Test** and write "2007" in Values.. The dialog box should look like this:



New Condition (after entering Test and Values)

5. Click **OK** to get the final result in **Record Security**:



Record Security

View Troubleshooting

Problem	Cause	Solution
Unable to connect to host	Wrong password, user name, or **View** password	Verify and enter again
Apply Security procedure wasn't successful	Wrong configuration value in file record security	Find the spool file of the job in the AS/400 and fix accordingly
Want to enter new group name but the **OK** buton is unavailable (grayed out)	Too many characters in name	Re-enter using only four characters
Want to grant full access to a certain field but the option is unavailable (grayed out)	It is an original file from the host. Look for the blue asterisk.	None! You cannot grant more permission to such a file.